DOCUMENT RESUME

ED 105 532 CS 501 046

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TITLE The TAGER-TV Instructional Network.
PUB DATE Apr 75
NOTE 11p.; Paper presented at the Annual Meeting of the Broadcast Education Association (Las Vegas, Nevada, April, 1975)

EDRS PRICE MF-$0.76 HC-$1.58 PLUS POSTAGE
DESCRIPTORS *Educational Programs; *Educational Research; *Educational Television; Graduate Study; Higher Education; Networks; *Program Descriptions; Teaching Methods
IDENTIFIERS TAGER; Texas Association for Graduate Education Research

ABSTRACT

In eight years of operation, the Texas Association for Graduate Education and Research (TAGER) Television Instructional Network, composed of nine North Central Texas Colleges, has offered 1,132 academic courses. A total of 25,591 students have taken these courses. All instruction is live and features a talk-back system by which students may interrupt instruction with questions. Current research reveals that network problems include the inability of students on remote locations to interact with instructors. Another problem is the general inability of teachers to adapt to television teaching techniques. There have been significant administrative changes at the network, and at present a task force is at work seeking new uses for the microwave network in the general area of continuing education. (Author/RB)

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The TAGER-TV Instructional Network

This year, 1975, marks the eighth year of operation for the TAGER-TV Instructional Network in North Central Texas. This microwave network joins together seven private and two public universities plus seven industrial plants in the Dallas-Fort Worth metroplex. To date, 1,132 academic courses involving 25,591 students have been carried over the system. The current semester (Spring, 1975) lists 95 courses in the TAGER-TV catalog with an enrollment of over 1,500 students. All instruction on the network is live except in those instances when an instructor must pre-record to solve a schedule conflict such as his being out of town or in the case of a guest lecturer who cannot be present at the regularly scheduled class time. This matter of live instruction has been a feature of the network since its conception and is enhanced by the fact that all students, regardless of campus location, are able to interrupt with questions through the network's telephone talk-back system.

The matter of live instruction is about the only thing that has remained constant with the network, however, since significant changes in the philosophy of the operation of the network have taken place since 1966.

TAGER is the acronymn for Texas Association for Graduate Education and Research, an organization that was chartered in 1965 and was the outgrowth of a planning grant from the Ford Foundation.

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TAGER, it should be pointed out, is the parent organization under which the present TAGER-TV Network operates.

The original thrust of TAGER was to foster graduate study in science and engineering both on the campuses of member universities and within area industry. The Dallas-Fort Worth metroplex is one of the nation's centers for airframe and electronics manufacture. In the original concept, personnel from industry were given released time to visit a local campus and take various science or engineer classes on the graduate level. But the time required in commuting to and from the classroom was a major problem. One example should suffice. General Dynamics is located in Fort Worth as is Texas Christian University. TCU does not have a school of engineering but does offer graduate work through the doctoral level in Physics, Chemistry, and Mathematics. Southern Methodist University in Dallas does offer graduate work in engineering. Consequently, a General Dynamics student could do graduate study in, say, physics in Fort Worth but would have to commute the thirty miles to SMU in Dallas for engineering courses. Actually, from General Dynamics to SMU campus is nearer sixty miles. This transportation problem was compounded by the geographical spread of the other cooperating industries, notably Ling-Tempco Vaught, Texas Instruments, Bell Helicopter, and Colling Radio.

In mid-1966 the idea was conceived of tying together Texas Christian University, Fort Worth; Southern Methodist University and the Southwest Center for Advanced Study (now the University of Texas at Dallas) and the participating industries by microwave.

The original concept was to tie together only those institutions offering graduate work in science, engineering, or business and area industry. All course work was to be limited to graduate level courses.

At this time, (it should be noted), the guiding philosophies of the network planners were these:

1. Only graduate level instruction in the sciences, engineering, or business would be offered.
2. All instruction would be live.
3. Instructors would be asked to make as few concessions to "being on television" as possible.
4. Every effort would be made to make the TV originating studio as much like a conventional classroom as possible.

Each of the original three universities had both sending and receiving rooms while the industrial sites installed receiving classrooms only. A typical sending classroom had three fixed-position cameras. Usually, two cameras were affixed to the back wall of the room and the third camera was ceiling mounted above the instructor's desk. This camera permitted the instructor to write on a desk pad...formulas, equations, graphs, and an occasional picture. Hopefully, this arrangement was to eliminate the use of blackboards, but math teachers found it difficult to break the blackboard habit. All three of the cameras were remote controlled so that one operator in the adjacent control room could pan, tilt, zoom, and focus the cameras while also switching occassionally from one camera to another.

Perhaps the most innovative aspect of the system was the talk-back phone arrangement. Beside each student's desk in both sending and receiving rooms was a phone with a simple button that had to be pushed to activate it. With this phone, a student could interrupt the live instruction at any point with a question. Phones were installed in the sending classrooms so that questions asked by students in the same room with the instructor could be heard by students at remote points.

The TAGER-TV Network became operational in September, 1967. Receiving rooms were installed in all of the area's cooperating industrial sites. For two years the network did well. General Dynamics was in production with its F111 contracts; Bell Helicopter and the Viet Nam War were in full swing; Texas Instruments was healthy; the same can be said of the other industrial concerns in the area. But as the economy began to slow down, so did the enrollment fees from industry. An effort was then made to broaden the participating academic base of the network. Associate member colleges of the TAGER organization were invited to join the network and a grant from the National Science Foundation made this possible in 1969. Texas Wesleyan College in Fort Worth, Austin College in Sherman, The University of Dallas, Bishop College and Dallas Baptist College soon had microwave legs coming onto their campuses. They were joined by the Health Science Center of the University Medical School in Dallas. As these joined the network, the original philosophies began to be severly tested. The University of Texas at Dallas, along with TCU and SMU, stood as the only schools

among the seven participating that offered graduate work, yet the network was dedicated to teaching only graduate courses and these limited to science, engineering and business. Changes had to be made. Changes were made.

Undergraduate level courses were introduced...sparsely at first, but more and more as the semesters rolled by. Today, the graduate level course is the exception, engineering courses are not generally offered on the academic network, and math courses are in relatively small demand.

At present, the primary purpose of the TAGER-TV Network is to bring a particular course to students on another campus who would not otherwise receive that course. Let me give a few short examples. Last year, the Chairman of the TCU Speech Department was made a Dean and had to reduce his teaching load. Troublesome course substitutions were avoided for four TCU graduating Speech majors by virtue of the needed course being taught over TAGER-TV by a SMU professor... Austin College recently and unexpectedly lost a professor of Greek and TCU offered Greek over TAGER-TV for Austin College. They responded by teaching Latin on the system while one of TCU's professor was on sabatical. Texas Wesleyan College and the University of Dallas each wanted a film program so TCU is now teaching Film History and Film Documentary over the network. The examples could continue, but I hope these make the point.

Administratively, the network's day-to-day operation is overseen by a full-time Academic Coordinator officed in the network's central transmitting building in Richardson, Texas,

a community immediately north of Dallas. General policy and long-range planning are carried out by a group called the TAGER Program and Policy Committee composed of two representatives from each campus. One of these representatives must be the chief academic officer on his campus. The other representative carries the title of Campus Director of TAGER Programs...there is one of these on each campus. Since I am the campus director of TCU, I tend to define my job as one of putting out brush fires...that is, I see to it that student control room operators are on the job... that our network teachers get what assistance they may need, and that my secretary who really runs the place does her work.

How is the system financed? This seems to be a prime question of everyone I talk to about TAGER-TV. The backbone microwave network was funded by a private donor. Each school, either on its own or through outside funding built its own classroom studios. Operating financing is equally divided nine ways in terms of maintenance. Other than that, it is on a cost-per-user basis. For every course transmitted, a school pays $600 network use fee. That is, if TCU originates four courses on the network, TCU pays a network use fee of $2,400 or 4 times $600. However, for every student on the network, TCU would get back $100. This money is paid by the school whose students are being taught via network. Again, I'll use arithmetic from TCU as an example. Let's suppose that the University of Dallas offers a course in Asian History that attracts seven TCU students. TCU would pay

the University of Dallas $700 for instructing these TCU students via the network. Since TCU charges $70 per semester hour, these seven students would have paid a combined tuition fee of $1,470 assuming we are dealing with a 3-hour course. Subtract from $1,470 the $700 paid to the University of Dallas, and TCU retains $770 for not teaching seven of its students in the conventional manner.

Two programs now in effect on the network are worth mentioning, the Classics Program and the Computer Science Program. Both of these are undergraduate degree bearing programs. None of the nine schools in the system offers a degree in either Classics or in Computer Science, but many of the participating TAGER schools offer one or more courses in these areas. By combining the best offerings from a number of the schools...a student on any of the nine campuses may now receive a degree in either Classics or Computer Science via the network. Similar plans are underway for Asian Studies.

Are there problems? Certainly. Whether or not students accept instruction over the network should be one of the chief keys to how well the system operates. Using this indicator, some problems do exist. Last year, students in both sending and in receiving classrooms were surveyed. Of students who had never received TAGER instruction from another campus but who had been in a TAGER sending classroom, 51% said they would not elect to be in a receiving classroom. But, of those who had received instruction from another campus, 81% indicated that they would take more courses

over the network.

How is this descrepency between 51% and 81% accounted for? Personal interviews with students in both types of classrooms helped us to understand the difference. Seven of the nine schools involved are private institutions. High in the recruiting inticements for those schools have been the offers of personalized instruction, small classes and the ability to meet with your instructor out of class. Students in a sending classroom have all of this as promised...the teacher is there in the same room with them live. The largest sending classroom in the system will hold no more than thirty students...the average is fifteen. However, these students in the live classroom hear disembodied voices coming in over the talk-back system from the other campuses asking questions. They realize that their live instructor cannot see and therefore cannot really know these remote students. They don't want to be in that situation. They like to be in a sending classroom, but imagine they would not like to be a remote campus student.

On the other hand, experience as witnessed by the 81% favorable reaction from students in receiving classrooms indicated that the instruction offered on the network is not all that impersonal. Once a student has received a course from a teacher on another campus, many of that student's imagined objections dissappear. These things are done to help that happen. TAGER teachers hold network office hours...very informal affairs during which any remote student can wander into his campuses sending TAGER studio and chat with the instructor...it is possible for these to be two-

way video meetings in which the student and the instructor alternately see each other. Also, most of the TAGER teachers travel from campus-to-campus at least twice during the semester originating their class with their remote students in live attendance.

Control over the quality of teaching has been a very real problem. The system has had, and continues to have good to excellent teachers...but teachers who are less than effective find their way onto the network also. To date, this has been largely due to the volunteer nature of teaching on the system. Anyone who wanted to teach via TAGER-TV has been allowed to do so. Suppose that you are a history teacher on Campus X and American History is taught by someone from Campus Y. You visit the TAGER receiving classroom on your campus and note inferior teaching. You cannot prohibit your students from taking the course because it is already in the catalog...now you can refuse to accept the course next semester based on what you now know...but the damage has already been done for this semester. This has been a serious problem from time to time and steps are being taken to remedy it. Screening committees from all academic areas will screen courses before accepting them from now on. Course outlines will be required and it is possible that examples of teaching will be offered over the network during non-class hours so that committee members may judge the prospective teachers ability.

Presently, a Task Force is at work looking for new uses for the network. Just where this will lead, we aren't sure.

High in the thinking right now is the possibility of tying the downtown public libraries of Dallas and Fort Worth into the network and expand into the field of Continuing Education. Some of the work in Continuing Education could be done now as the network is not at peak load during the evening hours...but a larger audience could be reached during noon hours by having receiving classrooms in a downtown location. The number of job classifications in Texas that require periodic state license renewal is quite large...one part of Continuing Education could be to offer refresher courses for those about to have to pass an examination for a state license renewal. Again, just where the network is eventually going is now open to conjecture. It has already made one significant change from its beginning operation...and now flexibility seems to be the rule.